

## **WHAT IS CLAIMED IS:**

1. An arrangement for avoiding contention on a communication medium among devices including at least a transmitter and a receiver, the arrangement comprising:

a first portion configured to instruct the receiver to indicate that the communication medium is busy for a time period substantially longer than an actual frame transmission period being sent from the transmitter to the receiver; and

a second portion configured to prohibit the receiver from transmitting on the communication medium during the time period.

2. The arrangement of Claim 1, wherein:

the first portion is embodied in the transmitter; and

the second portion is embodied in the receiver.

3. The arrangement of Claim 1, wherein:

the transmitter has a much higher throughput capability than the receiver.

4. The arrangement of Claim 1, wherein:

the first portion constitutes a field within a physical layer (PHY) protocol data unit (PDU), the field specifying a duration of the time period.

5. The arrangement of Claim 1, wherein:

the first portion includes a designation in a SIGNAL1 field of a physical layer convergence protocol (PLCP) frame constituting the same frame that is being sent from the transmitter to the receiver.

6. The arrangement of Claim 5, wherein:

legacy receivers, having a slower throughput capability than a throughput capability of the transmitter, recognize the SIGNAL1 field but do not recognize a SIGNAL2 field.

7. The arrangement of Claim 1, wherein the first portion sets the time period equal to a virtual clear channel assessment (VCCA) time period that equals a sum of:  
a content of a Duration field in frame header of the frame being transmitted;  
eight times a quotient of an actual length, in octets, of the frame being transmitted, and a transmission rate, in Mbps, of the frame being transmitted;  
an extended inter frame space; and  
a distributed inter frame space.

8. The arrangement of Claim 1, wherein:  
the first portion in a given frame is configured to include a length of a network allocation vector (NAV) configured to inherently perform a virtual carrier sense (VCS) function, thus avoiding a requirement of transmitting a separate additional frame to perform the VCS function.

9. The arrangement of Claim 1, wherein:  
the first portion in a given frame is configured to include a length of a network allocation vector (NAV) plus a time needed to transmit the given frame's payload, to inherently perform a virtual carrier sense (VCS) function in a clear channel assessment (CCA) stage, thus avoiding a requirement of transmitting a separate additional frame to perform the VCS function

10. A method for avoiding contention on a communication medium by devices including at least a transmitter and a receiver, the method comprising:

instructing a receiver to indicate that the communication medium is busy for a time period substantially longer than a frame being sent from the transmitter to the receiver; and

prohibiting the receiver from transmitting on the communication medium during the time period.

11. The method of Claim 10, wherein the instructing step includes:  
using a field within a physical layer (PHY) protocol data unit (PDU) to specify a duration of the time period.

12. The method of Claim 10, wherein the instructing step includes:  
using a designation in a SIGNAL1 field of a physical layer convergence protocol (PLCP) frame constituting the same frame that is being sent from the transmitter to the receiver.

13. The method of Claim 12, further comprising:  
in legacy receivers having slower throughput capability than a throughput capability of the sender, recognizing the SIGNAL1 field without recognizing a SIGNAL2 field.

14. The method of Claim 10, wherein the instructing step includes:  
including, in a given frame, a length of a network allocation vector (NAV) configured to inherently perform a virtual carrier sense (VCS) function, thus avoiding a requirement of transmitting a separate additional frame to perform the VCS function.

15. The method of Claim 10, wherein the instructing step includes:  
including, in a given frame, a length of a network allocation vector (NAV) plus a time needed to transmit the given frame's payload, to inherently perform a virtual carrier sense (VCS) function in a clear channel assessment (CCA) stage, thus avoiding a requirement of transmitting a separate additional frame to perform the VCS function

16. A network including a communication medium on which contention is to be avoided, the network comprising:

a transmitting element, configured to transmit on the communication medium,  
a frame that includes an instruction that the communication medium is busy for a time

period substantially longer than an actual transmission time of the frame that includes the instruction; and

a receiving element, configured to receive the frame that includes the instruction, and, in response to the instruction, to refrain from transmitting on the communication medium during the time period, so as to avoid the contention on the communication medium.

17. The network of Claim 16, wherein:

the transmitting element has a much higher throughput capability than the receiving element.

18. The network of Claim 16, wherein:

the communication medium is a wireless communication medium.

19. The network of Claim 16, wherein:

the instruction is a designation in a SIGNAL1 field of a physical layer convergence protocol (PLCP) frame constituting the same frame that is transmitted from the transmitting element to the receiving element, the SIGNAL1 field defining parameters associated with a particular communications protocol that is one of plural distinct communications protocols operating on the network.

20. The network of Claim 16, wherein:

the instruction includes a length of a network allocation vector (NAV) configured to inherently perform a virtual carrier sense (VCS) function, thus avoiding a requirement of transmitting a separate additional frame to perform the VCS function.